



ENERGY SYSTEMS LABORATORY

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July 26, 2011

Mr. Felix Lopez, P.E.
State Energy Conservation Office
Comptroller of Public Accounts
111 East 17th Street, Room 114
Austin, Texas 78701

Dear Felix,

In accordance with the Health and Safety Code Section 388.003, as amended, the Laboratory has been notified that SECO has received a petition from AEG to request the ESL to provide determination on the use of the REScheck[®], IC3, REM/Rate[®] and EnergyGauge USA[®] software tools in the State of Texas for energy code compliance purposes.

Chapter 4 of the 2009 IECC provides a prescriptive path, a U-factor alternative, a total UA alternative path, and a simulated performance alternative path. Chapter 11 of the 2009 IRC provides a prescriptive path, a U-factor alternative path, a total UA alternative path, but does not have provisions for the use of the simulated performance alternative path.

Any software tool, including REM/Rate[®] and EnergyGauge USA[®] when used in conjunction with the ENERGY STAR[®] program is deemed to have met the Texas Building Energy Performance Standards (TBEPS) since the Texas statute recognizes the US EPA Energy STAR as being in compliance with the TBEPS (Health and Safety Code Section 388.003(i)). REM/Rate[®] is software from the Architectural Energy Corporation, Boulder, Colorado, and EnergyGauge USA[®] is software from the Florida Solar Energy Center (FSEC), Cocoa, Florida. Both REM/Rate[®] and EnergyGauge USA[®] are performance-based energy code compliance software tools that have been accredited by the Residential Energy Services Network (RESNET) for use with the IECC Simulated Performance Alternative Path compliance option (www.resnet.us).

The ESL's software tool, the International Code Compliance Calculator (IC3 - Ver. 3.9.7), is a publically available, RESNET-accredited, web-based software tool that can be used directly to show compliance with the 2009 IECC performance path. In addition, IC3 is the only code-compliance performance path software tool that is also recognized by the US EPA to calculate creditable NO_x, SO_x and CO₂ emissions reductions using a US EPA modified version of the eGRID database for Texas. ESL report ESL-TR-10-12-05 provides a detailed analysis of the IC3's RESNET accreditation.

The current version of REScheck[®] (Ver. 4.4.1) provides a total UA alternative path (2009 IECC, Sec. 402.1.4) and a limited simulated performance alternative path. However, the simulated performance alternative path in the REScheck[®] software tool is for the envelope only, and includes an orientation/SHGC trade-off. The current version of REScheck[®] does not satisfy the minimum capabilities for calculation software tools designated in Section 405.6 of the 2009 IECC. Therefore, REScheck[®] (Ver 4.4.1) can only be used to verify compliance for the U-factor alternative (2009 IECC Section 402.1.3, 2009 IRC Section N1102.1.2) and for the Total UA alternative (2009 IECC Section 402.1.4, 2009 IRC Section N1102.1.3) The ESL will be testing the stringency of REScheck[®]'s simulated envelope performance alternative and will report the results by December 31, 2011, which is prior to the date the new TBEPS becomes effective for single-family residential construction in Texas (2009 IRC Chapter 11).

Sincerely,

Bahman Yazdani, P.E.
Associate Director

Charles Culp, P.E., Ph.D.
Associate Director

Jeff Haberl, P.E., Ph.D.
Associate Director

Cc: David Claridge, P.D., Ph.D., Director, ESL